

# THE TAXONOMY OF SOME INDO-PACIFIC MOLLUSCA

## PART 8

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*Abstract.* New geographical records are recorded for *Morum exquisitum* (Adams & Reeve), *Pterynotus loebbeckei* (Kobelt), *Latiaxis gyratus* (Hinds), *Ziba cloveri* Cernohorsky, *Vexillum (Pusia) salisburyi* Cernohorsky, *Terebra eburnea* Hinds and *Turris garnonsii* (Reeve). *Peristernia corallina* Melvill & Standen is re-assigned to the Muricidae with *Nassaria mordica* Hedley and *Muricopsis martini* Fischer in Wanner in synonymy, and *Triton carduus* Reeve is re-assigned to the *farinosa-egregia* group of *Engina* in the Buccinidae. *Tritonidea submenkeana* Pilsbry and *Enzinopsis resta* Iredale are synonymized with *Engina menkeana* (Dunker) a species which is now known to live as far south as Lord Howe I, and *Nassarius fontanei* (d'Orbigny) is placed in synonymy of *N. exilis* (Powys). The species *Nassarius fraudator* from Australia and *Mitra deynzeri* and *Thala maxmarrowi* from the Western Pacific are described as new to science.

### Family CASSIDAE

#### Genus *Morum* Roeding, 1798

*Morum* Roeding, 1798, Mus. Bolten. p.53. Type species by M *M. purpureum* Roeding, 1798 (= *Strombus oniscus* Linnaeus, 1767). Recent, West Atlantic.

#### *Morum exquisitum* (Adams & Reeve) (Fig. 1)

1848. *Oniscia exquisita* Adams & Reeve, Zool. voy. H.M.S. "Samarang", Ref. to plates, p.x, pl. 5, figs. 3a, b; 1849 Reeve, Conch. Iconica 5: pl. 1, fig. 3; 1850 Adams & Reeve, Zool. voy. H.M.S. "Samarang", Pt. 2:35.
1977. *Morum (Oniscidia) exquisitum* (Adams & Reeve), Emerson, Nautilus 91 (3): 83, figs. E, F, J (detailed synonymy).

TYPE LOCALITY. Near Sulu City, Sulu Archipelago, Philippine Is, 16-20 fathoms (29-37 m).

Emerson (1977) in a recent paper on Indo-Pacific species of *Morum* gave a review of *M. exquisitum* and stated that records other than those from the Philippines should be rejected. However, recently specimens of the species have been collected on Okinawa I, Ryukyu Is (leg. P. Bellin) and a specimen is here illustrated (Fig. 1).

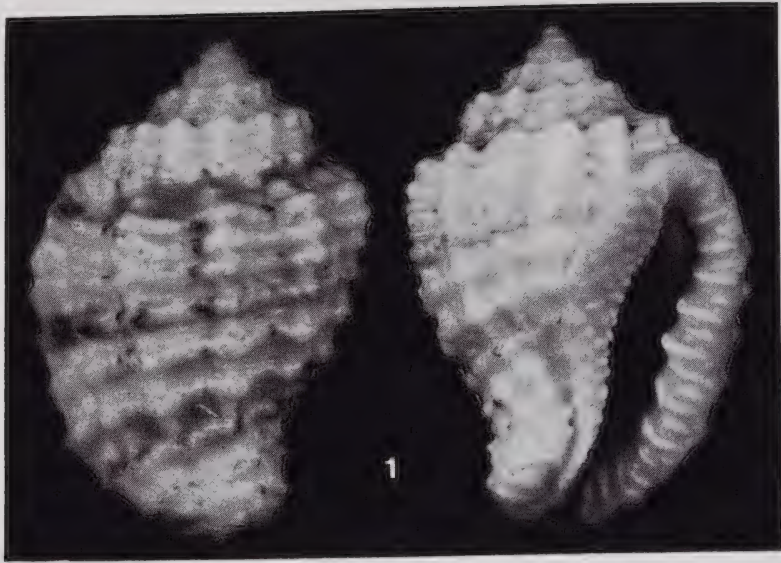


Fig. 1. *Morum exquisitum* (Adams & Reeve). Okinawa, Ryukyu Is; 21.9 mm.

#### Family MURICIDAE

#### Genus *Pterynotus* Swainson, 1833

*Pterynotus* Swainson, 1833, Zool. Illust. (2), 3: expl. to pl. 100. Type species by SM (Swainson, 1833) *Murex pinnatus* Swainson, 1822 = *Purpura alata* Roeding, 1798. Recent, Indo-Pacific.

#### *Pterynotus loebbeckei* (Kobelt in Loebbecke & Kobelt, 1879) (Fig. 2)

1879. *Murex (Pteronotus) loebbeckei* Kobelt in Loebbecke & Kobelt, Jahrb. deut. malak. Gesell. 6:78.  
 1880. *Murex loebbeckei* Kobelt in Loebbecke & Kobelt, Jahrb. deut. malak. Gesell. 7: 80, pl. 3, fig. 2; 1979 Roth, Hawaiian Shell News 27 (11): 8.  
 1942. *Pterynotus loebbeckei* (Kobelt), Yen, Proc. Malac. Soc. Lond. 24: 223; 1971 E.M. Vokes, Bull. Americ. Paleont. 61 (268): 66; 1976 Radwin & D'Attilio, Murex shells world p. 99, pl. 9, fig. 14.  
 1963. *Murex (Pterynotus) loebbeckii (sic)* Kobelt, Shikama, Sel. shells world col. 1: pl. 54, fig. 3.  
 1976. *Pterynotus loebbecki (sic)* Kobelt, Fair, The Murex book, p. 55, pl. 13, fig. 153.

TYPE LOCALITY. Seas of Indochina (= South China Sea).

The species is rather variable, especially in the development of the wing-like varices. It has been previously reported from Japan, China, Taiwan and the Philippines, and the specimen taken in a fish-trap at Russel I, Solomon Is, in 24-30 m (Fig. 2), represents a considerable southeastward range extension. A closely similar species (or variant of *P. loebbeckei*) from the Philippine Is has been recently described under the name *Pterynotus miyokoae* Kosuge, 1979.





Figs. 2-4. 2. *Pterynotus loebbeckei* (Kobelt in Loebbecke & Kobelt). Russel I, Solomon Is, 24-30 m; 66.5 mm. 3, 4. *Muricopsis corallinus* (Melvill & Standen). 3. Holotype BMNH No. 1903.12.15.105.; 12.2 mm. 4. Holotype of *Nassaria mordica* Hedley. AMS No. C-27378; 16.0 mm.

### Genus *Muricopsis* Bucquoy, Dautzenberg & Dollfus, 1882

*Muricopsis* Bucquoy, Dautzenberg & Dollfus, 1882, Moll. Mar. Roussillon 1: 16, 19. Type species by OD *Murex blainvillei* Payraudeau, 1826. Recent, Mediterranean.

#### *Muricopsis corallinus* (Melvill & Standen, 1903) (Figs. 3, 4)

1903. *Peristernia corallina* Melvill & Standen, Ann. Mag. Nat. Hist. (7), 12: 308, pl. 22, fig. 11.  
 1909. *Nassaria mordica* Hedley, Proc. Linn. Soc. N.S.W. 34 (3): 462, pl. 44, fig. 100.  
 1927. *Muricopsis martini* Fischer in Wanner, Palaeont. Timor 15: 80, pl. 213, figs. 53, 54.  
 1971. *Janiopsis martini* Fischer, E.H. Vokes, Bull. Americ. Paleont. 61 (268): 69.

TYPE LOCALITY. Near Muscat, Gulf of Oman, 10 fathoms (18 m) [*corallinus*]; off Hope I, Queensland, Nth. Australia, 5-10 fathoms (9-18 m) [*mordica*]; Seran, Timor, Pliocene of Indonesia (*martini*).

Type specimens. The holotype of *P. corallina* Melville & Standen is in the British Museum (Nat. Hist.) No. 1903.12.15.105, dimensions 12.2 x 7.2 mm; the holotype has 6½ whorls, 8 axial folds and 3 spiral cords on the penultimate and 7 axials and 7 cords on the body whorl, 7 denticles on the outer lip and 4 on the columella and an additional parietal denticle. The colour is dirty white (Fig. 3).

The holotype of *Nassaria mordica* Hedley, is in the Australian Museum, Sydney, No. C-27378, dimensions 16.0 x 8.6 mm; the holotype has 7 axial ribs on the penultimate and 7 on the body whorl, the outer lip has 7 denticles and the columella 5 and the colour is buff (Fig. 4).

A great deal of confusion has surrounded this species which has been omitted from 2 recent monographs of the Muricinae. The original authors assigned the species to the genus *Peristernia*, Moersch, family Fasciolaridae, and *Nassaria mordica* was placed in *Nassaria* Link, family Buccinidae. The Pliocene species *martini*, which is undoubtedly conspecific with *M. corallinus*, was correctly placed in *Muricopsis* but was re-assigned to *Janiopsis* Rovereto, a Tertiary buccinid genus from European deposits by E.H. Vokes (1971). The species is similar to *M. blainvillei* (Payraudeau), the type species of *Muricopsis* and also closely resembles *M. bombayanus* (Melvill) and other Indo-Pacific species and the assignment of *corallinus* to the muricid genus *Muricopsis* is most appropriate.

### Family CORALLIOPHILIDAE

#### Genus *Latiaxis* Swainson, 1840

*Latiaxis* Swainson, 1840, Treat. Malac. p. 306. Type species by M *Pyrula mawae* Gray in Griffith & Pidgeon, 1834. Recent, Indo-Pacific.

#### *Latiaxis gyratus* (Hinds, 1844) (Figs. 5, 6)

1844. *Trophon gyratus* Hinds, Voy. H.M.S. "Sulphur", Zool. 2: 14, pl. 1, figs. 14, 15: 1935 Tomlin, J. Conch. 20 (6): 18.  
 1845. *Murex gyratus* Hinds, Reeve, Conch. Iconica 3: pl. 26, spec. 109.  
 1847. *Pyrula idoleum* Jonas, Proc. Zool. Soc. Lond. Pt. 14: 120; 1935 Tomlin, J. Conch. 20 (6): 182.  
 1847. "*Pyrule fusiforme*" Chenu, Lecons Element. pl. 9, figs. 3, 3a (*nom. nud.*).  
 1853. *Pyrula fusiformis* Chenu in Roquan, J. Conchyl. 4: 406 (ref. to Chenu, 1847, pl. 9, figs. 3, 3a).  
 1864. *Latiaxis tortilis* H. & A. Adams, Proc. Zool. Soc. Lond. for 1863: 431; 1882 Sowerby, Thes. Conchyl. 5: 3, pl. 424, fig. 1; 1935 Tomlin, J. Conch 20 (6): 183; 1942 Yen, Proc. Malac. Soc. Lond. 24:225.  
 1867. *Latiaxis textilis* (*sic*) Gray, Ann. Mag. Nat. Hist. (3), 20: 78 (error for *tortilis* H. & A. Adams).  
 1880. *Latiaxis idolea* Jonas (*pars*), Tryon, Man. Conch. 2: 203, pl. 64, fig. 342 only.  
 1882. *Latiaxis pagodus* "Jonas", Sowerby, Thes. Conchyl. 5: 3, pl. 424, figs. 2, 3 (non *Murex pagodus* A. Adams, 1853 = *Latiaxis*).  
 1882. *Latiaxis gyratus* (Hinds), Sowerby, Thes. Conchyl. 5: 3, pl. 424, fig. 10; 1924 Yen, Proc. Malac. Soc. Lond. 24: 226; 1974 Dance, Encycl. shells p. 137, centre fig. in left column.  
 1963. *Latiaxis (Mipus) gyratus* (Hinds), Shikama, Select. shells world 1: 77, pl. 60, figs. 5, 6.  
 1966. *Pseudomurex gyratus* (Hinds), Habe & Kosuge, Shells world col. 2: 56, pl. 20, fig. 18.

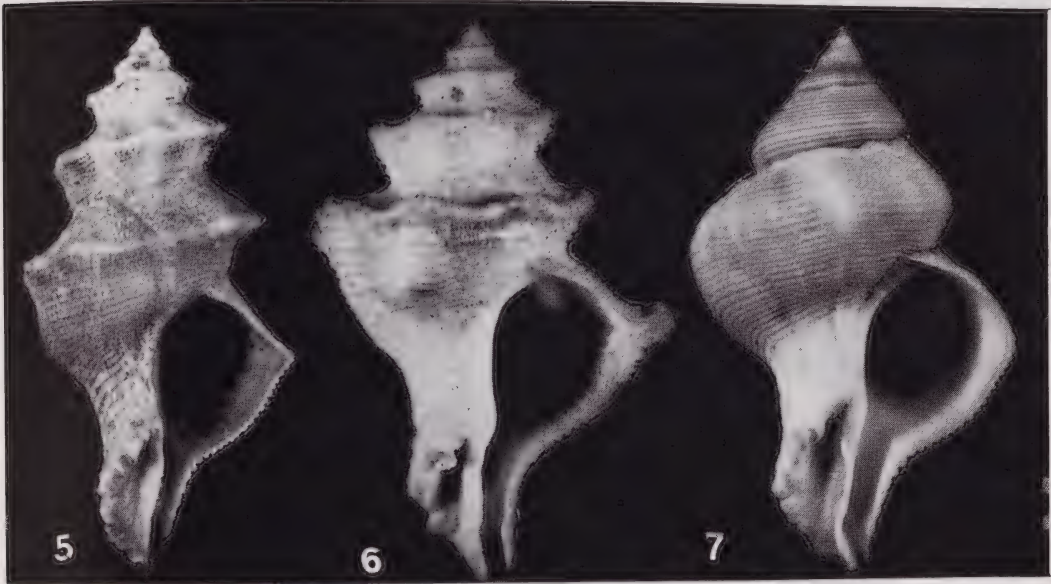
TYPE LOCALITY. Straits of Maccassar, Indonesia, 17 fathoms (31 m) [*gyratus*]; none (*idoleum* and *pagoda* Sowerby); China (*tortilis*); probably China (*fusiformis*).

*Type specimen.* The holotype of *L. tortilis* H. & A. Adams, is in the British Museum (Nat. Hist.), dimensions 38.3 x 25.2 mm; the holotype has 8 coarse axial folds on each of the last 2 whorls, and 11-12 spiral cords on the penultimate and 32 cords on the body whorl (Fig. 6). *L. tortilis* has been based on a mature specimen while the type-figure of *L. gyratus* suggests an immature individual.

Considerable confusion exists as to the specific validity of the names *gyratus*, *tortilis* and *idoleum*. Tryon (1880) considered *L. gyratus* (Hinds) and the species described as *L. eugeniae* (Bernardi, 1853) to be variants of one of the same species, while Tomlin (1935) and all subsequent authors consider them to be separate species. Recently, however,



Dance (1974) applied the name *idoleum* Jonas to the species known as *L. eugeniae* (Bernardi) [Fig. 7], and placed the latter epithet in synonymy. Jonas (1847) in his original description clearly states that the whorls are "centrally acutely angulate" and compares *L. idoleum* to the roofs of a Chinese pagoda. These characters clearly demonstrate that his species was *L. gyratus* and not *L. eugeniae*, and the latter species is accordingly placed in synonymy of *L. gyratus*. Yen (1942) and Barnard (1959) consider *L. gyratus* and *L. tortilis* to be distinct species mainly on the basis of size, while Tomlin (op. cit.) correctly treats both as conspecific.



Figs. 5-7. 5, 6. *Latiaxis gyratus* (Hinds). 5. Simpson Harbour, Rabaul, New Britain, 91 m; 25.9 mm. 6. Holotype of *L. tortilis* H. & A. Adams, BMNH; 38.3 mm. 7. *L. eugeniae* Bernardi. Straits of Taiwan; 46.5 mm.

A small specimen of *L. gyratus* has been recently dredged between Vulcan and Beehives, Simpson Harbour, New Britain, in 91 m (*leg.* B. Parkinson) [Fig. 5]. The specimen measures 25.9 x 12.2 mm, and has  $5\frac{3}{4}$  whorls and  $1\frac{1}{2}$  embryonic whorls; the transitional area between protoconch and teleoconch is finely axially ribbed.

### Family BUCCINIDAE

#### Genus *Engina* Gray, 1839

*Engina* Gray, 1839, Zool. Capt. Beechey's Voy. "Blossom", p. 112. Type species by SD (Gray, 1847) *E. zonata* Gray, 1839 = *Purpura turbinella* Kiener, 1836. Recent, Caribbean.

#### *Engina carduus* (Reeve, 1844)

(Fig. 8)

1844. *Triton carduus* Reeve, Conch. Iconica 2: pl. 19, fig. 95; 1894 E.A. Smith, Ann. Mag. Nat. Hist. (6), 14: 163.  
 1859. *Nassaria carduus* Reeve, Sowerby, Thes. Conchyl. 3: 87, pl. 220, fig. 14; 1881 Tryon, Man. Conch. 3: 221, pl. 84, fig. 537 (placed in synonymy of *N. nivea* Gmelin, 1791); 1928 Faustino, Summ. Philippine mar. fresh-water Moll. p. 254.

TYPE LOCALITY. Originally none. (Philippines *vide* Sowerby, 1859).

*Type specimen.* The holotype of *T. carduus* Reeve is in the British Museum (Nat. Hist.) No. 1967649, dimensions 14.4 x 8.8 mm; the holotype has 6 mature whorls and a protoconch of 2½ small, glassy-brown embryonic whorls, 8 axial ribs and 7 overriding, sharp spiral cords on the penultimate and 12 axial ribs and 14 cords on the body whorl and an additional 9 cords on the siphonal fasciole, the interspaces are finely axially striate, outer lip with 7 denticles, part of the interior of the columella is missing, the parietal region has a glazed, thin and lirated callus and the shell is creamy-white with reddish-brown spots (Fig. 8).

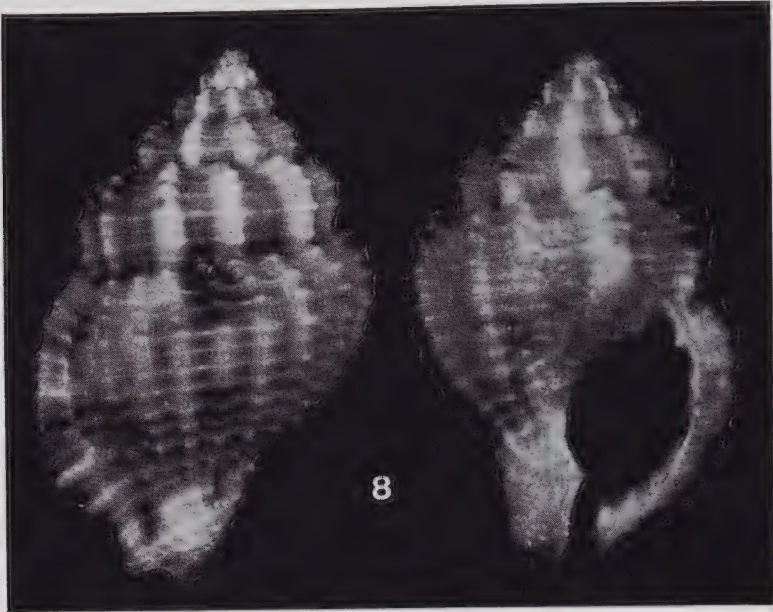


Fig. 8. *Engina carduus* (Reeve). Holotype BMNH No. 1967649; 14.4 mm.

This rather rare species was originally described in the genus *Triton auctt.* and was later re-assigned to the buccinid genus *Nassaria* Link, and even synonymized with *Nassaria nivea* (Gmelin, 1791) [= *N. pusilla* Roeding, 1798] by Tryon (1881). E.A. Smith (1894) considered *Triton carduus* to bear no relationship with *Nassaria nivea* (Gmelin) and suggested a placement in the genus *Colubraria* Schumacher. He further remarked that fine examples of the species have been received from Mauritius by the British Museum (Nat. Hist.).

*Triton carduus* Reeve, would be best assigned to *Engina s.l.*, in the same group of *Engina* containing *E. egregia* (Reeve) and *E. farinosa* (Gould).

***Engina menkeana* (Dunker, 1860)**

(Figs. 9-11)

1860. *Cantharus (Pollia) menkeana* Dunker, Malakozool. Blaetter 6: 222.

1861. *Cantharus menkeanus* Dunker, Moll. Japon. p. 7, pl. 1, fig. 7.

1901. *Tritonidea submenkeana* Pilsbry, Proc. Acad. Nat. Sci. Philad. 53: 387, pl. 21, fig. 24.

1940. *Enzinopsis resta* Iredale, Austral. Zool. 9 (4): 434, pl. 32, fig. 11.

1975. *Engina menkeana* (Dunker), Cernohorsky, Rec. Auckland Inst. Mus. 12:184, fig. 21 (extended synonymy).



TYPE LOCALITY. Dejima, Nagasaki City, Kyushu, Japan (*menkeana*); Hirado, Hizen, W. Kiusiu, Japan (*submenkeana*); Lord Howe I (*resta*).

*Type specimens.* Six syntypes of *Tritonidea submenkeana* Pilsbry, are in the Academy of Natural Sciences, Philadelphia. No. 80538, dimensions of illustrated syntype 12.3 x 6.1 mm (Fig. 9). The holotype of *Enzinopsis resta* Iredale, is in the Australian Museum, Sydney, No. C-59634a, dimensions 11.8 x 5.3 mm (Fig. 10).



Figs. 9-11. *Engina menkeana* (Dunker). 9. Syntype of *Tritonidea submenkeana* Pilsbry, ANSP No. 80538; 12.3 mm. 10. Holotype of *Enzinopsis resta* Iredale, AMS No. C-59634a; 11.8 mm. 11. Specimen from Fukura, Japan; 11.0 mm.

Recent material obtained from the S.W. Pacific contained several species previously thought to have been confined to the Sino-Japanese region. *Engina resta* (Iredale) is another instance of a S.W. Pacific distributin of a Japanese species, and when compared with specimens of *E. menkeana* (Dunker) and types of *E. submenkeana* (Pilsbry), clearly proves to be conspecific. Melvill & Standen (1895) already commented on the occurrence of *E. menkeana* in Lifu, Loyalty Is.

#### Family NASSARIIDAE

(A decision on the validity of the family-group name is pending with the I.C.Z.N., No. Z.N. (S.) 1887).

#### Genus *Nassarius* Duméril, 1806

*Nassarius* Duméril, 1806, Zool. analyt. p. 166. Type species by SM (Froriep, 1806) *Buccinum arcularia* Linnaeus, 1758. Recent, Indo-Pacific.

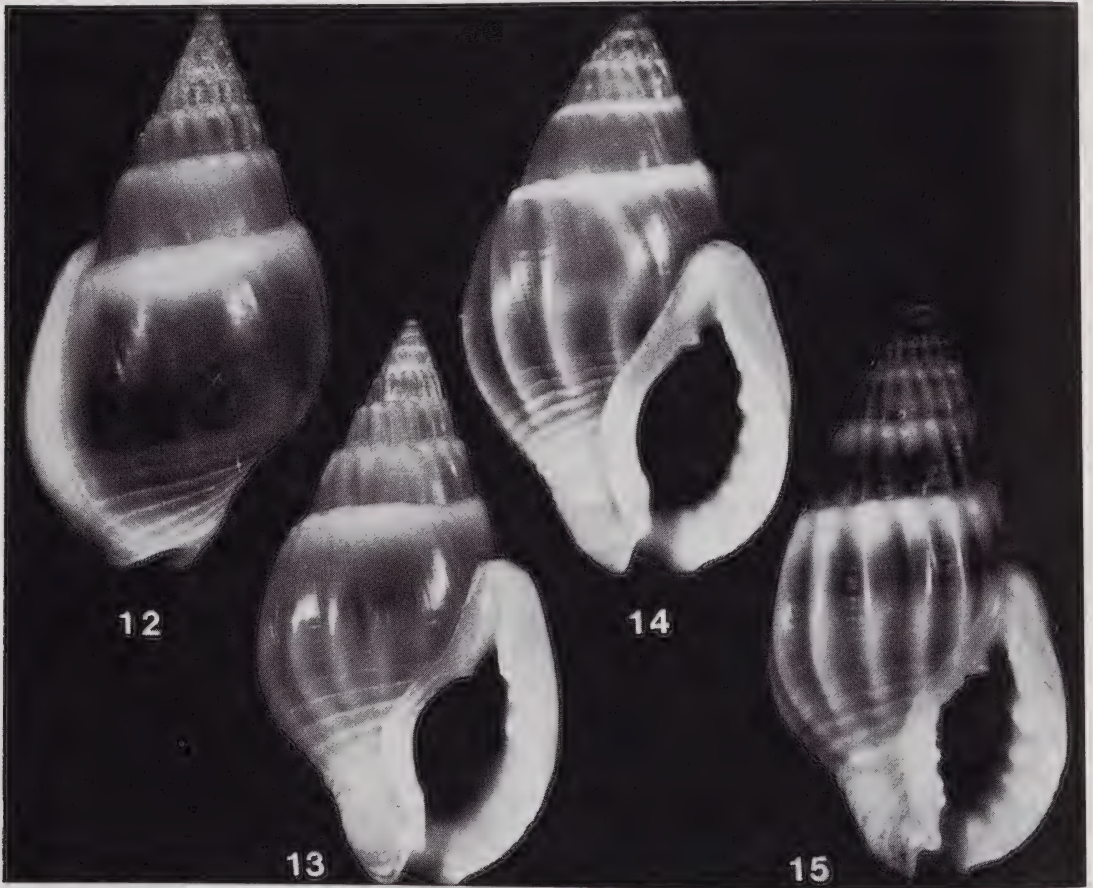
(Figs. 12-17)

#### *Nassarius fraudator* sp. n.

Shell up to 18.0 mm in length, elongate-ovate and very solid, teleoconch of 6-7 flat-sided whorls, protoconch incomplete in adults and very worn in juveniles, sutures distinct. Early spire whorls sculptured with strong, angulate axial ribs which are weakly

indented at sutures to form a row of not very prominent sutural nodules, last 2 whorls extremely variable in sculpture, penultimate whorl either smooth or with up to 15 axial ribs, ventral side of body whorl with 4-7 strong, sinuous axial ribs, dorsal side without ribs; the sutures of the last 2 whorls have either a shallow spiral groove or a low, ill-defined sutural girdle, varix very strong and with prominent short spiral threads in the depression of the varix. Spiral sculpture usually absent on spire whorls, penultimate whorl usually smooth or rarely with up to 6 finely impressed, short grooves between ribs, body whorl also usually smooth on the upper half or with up to 12 fine grooves between ribs followed by 4-5 cords and another 5-8 cords on the siphonal fasciole. Outer lip varix thick and prominent, interior with 6-8 angulate lirae, columella distinctly calloused and with 4-9 round nodules and a parietal denticle, anal canal well developed. Variable in colour but usually dark brown, tan or grey, sutures and varix white to cream, occasional specimens off-white with only broad brown bands on last 2 whorls, aperture white but brown deep in interior. Operculum corneous, brown, with an apical nucleus (Fig. 17).

Radular ribbon *c.* 21% of shell-length, with 60-70 rows of teeth and 4-5 nascentes. The rachidians with 11 slender cusps, central cuspl larger, laterals bicuspid (Fig. 16).



Figs. 12-15. *Nassarius fraudator* sp. n. 12, 13. Somerset Bay, Cape York Peninsula, Nth. Qld., Australia. Holotype AMS No. C-114468; 17.5 mm. 14. Paratype from Hall Sound near Port Moresby, Papua New Guinea; 16.0 mm. 15. Stronger ribbed paratype from Darwin, Northern Territory, Australia; 12.9 mm.

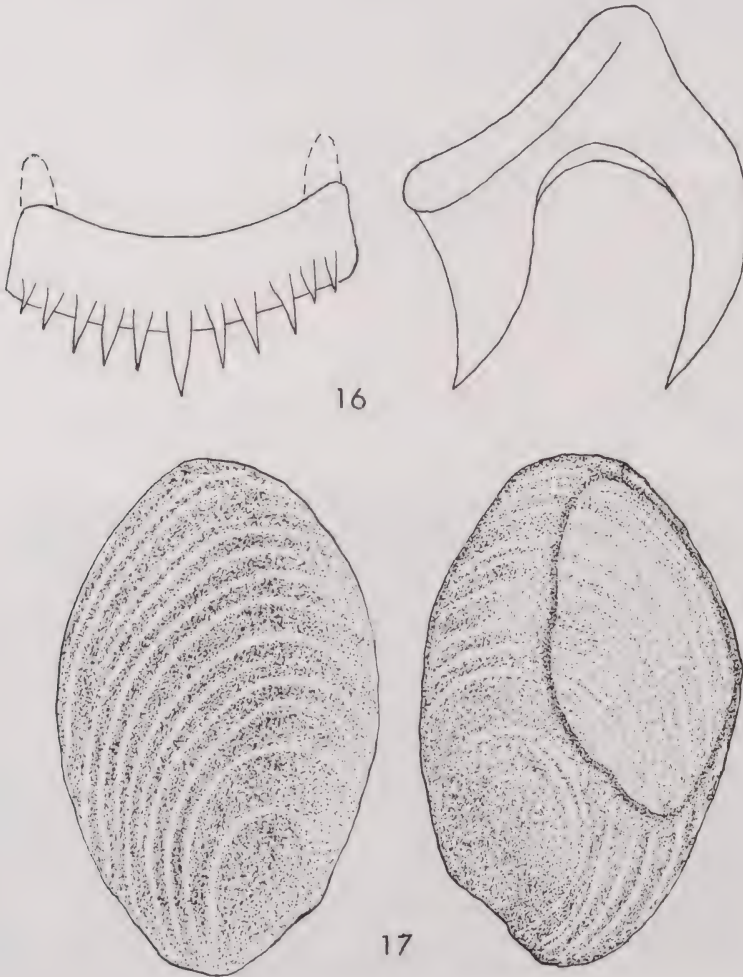


TYPE LOCALITY. Somerset Bay, Cape York Peninsula, Nth. Queensland, Australia, intertidal on sand-flats.

DISTRIBUTION. From Exmouth Gulf, West Australia to Cape York, Nth. Queensland and the southern coast of Papua New Guinea.

*Holotype*. In the Australian Museum, Sydney, No. C-114468, length 17.5 mm, width 9.3 mm (Figs. 12, 13).

*Paratypes*. West Australia: S.E. of Exmouth homestead, S. of Learmouth, Exmouth Gulf (AMS No. C-114337, 1 spec.); Broome (AMS No. 114339, 5 spec; AMS No. C-51048, 2 spec.; coll. A.W.B. Powell No. 9010, 10 spec.); Barred Creek, Broome (AIM, 2 spec.); Northern Territory: Darwin (AIM, 1 spec.); Rose River Mission, Arnhem Land, Gulf of Carpentaria (AMS, No. C-114467, 1 spec.); North Queensland: Mud Bay, Cape York (AMS, No. C-114466, 3 spec.; No. C-61515, 4 spec.); Somerset Bay, Cape York, on



Figs. 16, 17. *Nassarius fraudator* sp. n. 16. Half-row of radula. 17. Operculum.

sand-flats (AMS, No. C-114468, 1 spec.); near Bamaga, N.W. Cape York Peninsula (AMS, No. C-114340, 1 spec.); Papua New Guinea: Hall Sound, N.W. of Port Moresby (AMS, No. C-54863, 3 spec.).

This new species has been known since last century when John Brazier collected specimens at Mud Bay, Cape York, Nth. Queensland, and labelled them "*Nassa (Alectrion) monile* Kiener var. *jacksoniana* Quoy". The species *Nassarius monile* (Kiener, 1834), which is a primary homonym and has been replaced with *N. distortus* (A. Adams, 1852), is a common tropical Indo-Pacific species which is so appreciably different to *N. fraudator* that no comparison is necessary. However, the new species is indeed similar to *N. jacksonianus* (Quoy & Gaimard, 1833), a species erroneously described from "Port Jackson, Australia", but known to live in a restricted area extending from Java to Malaysia, Thailand and India. *N. jacksonianus* is similar in form to *N. fraudator*, but is smaller, usually between 10.0-12.0 mm in length, the axial ribs are much thicker and terminate in a different fashion at the body whorl, the penultimate whorl never lacks axial ribs and the spiral sculpture is considerably more pronounced; the columella is not as concave as in *N. fraudator* and the columellar callus is broader, thinner, less regular and always thin and translucent above the parietal wall.

***Nassarius exilis* (Powys, 1836)**

(Figs. 18, 19)

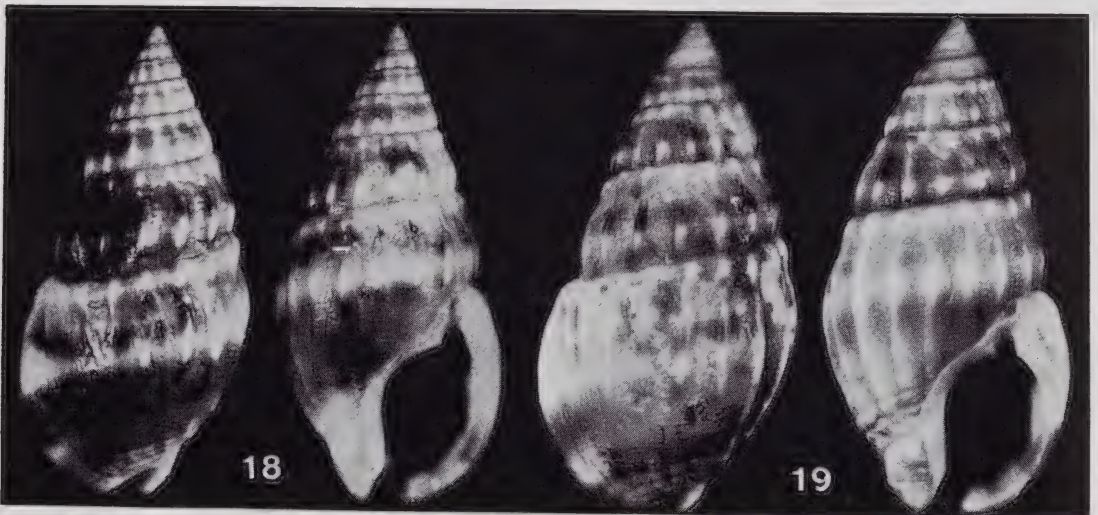
1835. *Nassa exilis* Powys, Proc. Zool. Soc. Lond. Pt. 3: 95.

1841. *Nassa fontanei* d'Orbigny, Voy. L'Amér. Mérid. 5 (3): 433, pl. 77, figs. 5, 6; 1966 Keen, Veliger 9 (1): 4, pl. 1, fig. 3 (figd. lectotype).

1852. *Nassa panamensis* C.B. Adams, Ann. Lyc. Nat. Hist. New York 5: 288 (non *Buccinum panamense* Philippi, 1851 = *Nassarius*).

1975. *Nassarius exilis* (Powys), Cernohorsky, Rec. Auckland Inst. Mus. 12: 138, fig. 38 (extended synonymy).

TYPE LOCALITY. Paita, Peru (*exilis* and *fontanei*); Panama (*panamensis*).



Figs. 18, 19. *Nassarius exilis* (Powys). 18. Syntype BMNH; 15.7 mm. 19. Lectotype of *Nassa fontanei* d'Orbigny, BMNH No. 1854.12.4.456.; 15.7 mm.



*Type specimens.* Three syntypes of *N. exilis* are in the British Museum (Nat. Hist.), dimensions of illustrated syntype 15.7 x 7.2 x 7.4 mm (width-ratio 46%) [Fig. 18]. The lectotype of *N. fontanei* d'Orbigny is in the same Institution No. 1854.12.4.456., dimensions 15.7 x 7.9 x 7.5 mm (width-ratio 50%) [Fig. 19]. The lectotype of *N. panamensis* C.B. Adams, is in the Museum of Comparative Zoology, Harvard, No. 186283 (width-ratio 49% from lectotype figure).

Keen (1966) selected a lectotype from the 2 extant syntypes of *Nassa fontanei* and separated the taxon from *Nassarius exilis* (Powys) with which it was synonymized by all other authors. The basis for specific separation was the proportionately greater width and the presence of sutural axial beads in *N. fontanei*. As can be seen from the appended measurements for the types of *N. exilis* and *N. fontanei*, the width-ratio is 46% and 50% respectively, and in view of the 10%-15% range in width-ratio in *Nassarius*, the 4% difference is hardly significant. Axial sutural nodules are present in many specimens of *N. exilis* and are also present in one of the syntypes; the dark central band in *N. fontanei* overlaps onto the body whorl varix in the same manner as in *N. exilis*. No constant diagnostic characters could be found which would assist in the separation of the two forms and *N. fontanei* is placed in synonymy of *N. exilis*.

#### Family MITRIDAE

#### Genus *Mitra* Lamarck, 1798

*Mitra* Lamarck, 1798, Tabl. Encycl. Méth. pl. 369. Type species by T *Voluta mitra* Linnaeus, 1758. Recent, Indo-Pacific.

#### *Mitra deynzeri* sp. n.

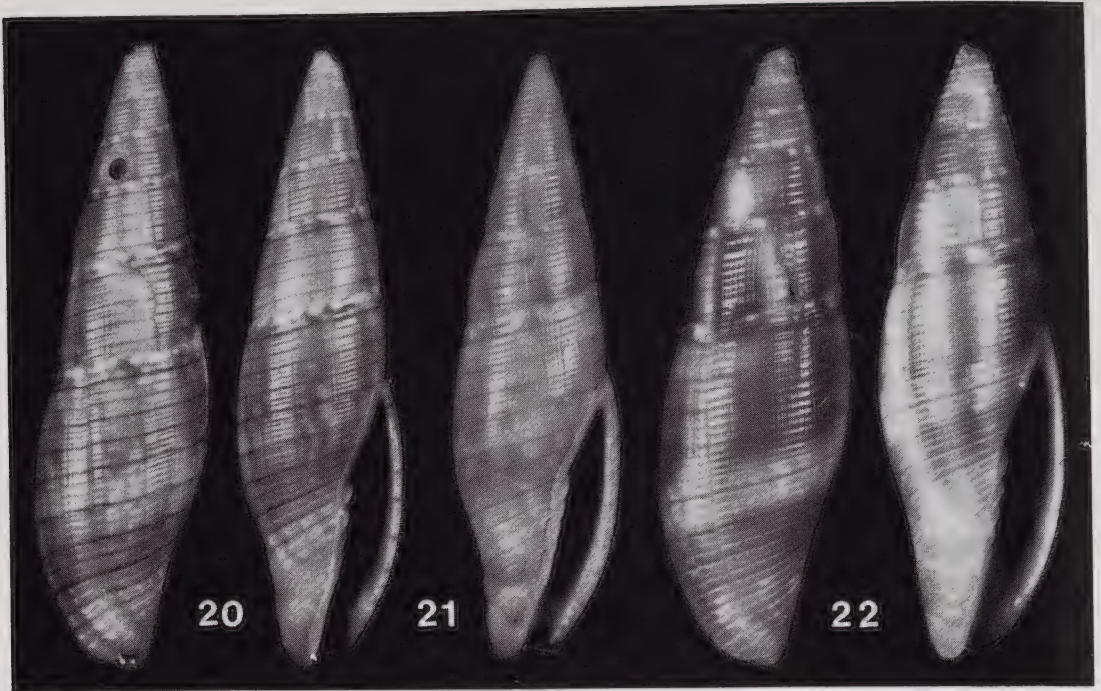
(Figs. 20-22)

Shell small, up to 27.0 mm in length but frequently smaller, fusiformly-elongate, width 22%-29% of length, solid, teleoconch of 6-8 weakly convex whorls, protoconch preserved to only 2½ smooth, white embryonic whorls in one paratype but probably conical-multispiral. Early mature whorls granulose, with 3 elevated spiral cords which are rendered granulose by descending axial lirae, sutures with a deeper spiral groove giving the impression of a single or bi-cordate sutural girdle; sculpture on later whorls consists of numerous, close-set, finely punctate or axially striate grooves which number from 7-17 on the penultimate and from 14-29 on the body whorl, siphonal fasciole with an additional 14-16 close-set, oblique cords. Aperture very narrow, about equal in height to the spire, smooth within, outer lip convex, moderately thickened in adult specimens, columella narrowly calloused and with 5-6 oblique, regular folds, siphonal notch distinct, siphonal canal straight. Base colour reddish-brown, body whorl with a broad, white, undefined marbled central band, sutural girdle with white, irregular spots, nebulous white axial streaks present on whorls, base of shell with a few white spots; overlying this pattern are wide-spaced, dark brown spiral lines which number from 4-7 on the penultimate and from 10-15 on the body whorl, aperture tan to orange-brown.

TYPE LOCALITY. Seragaki area of west coast of Okinawa I, Ryukyu Is, Japan, in 37-43 m, rubble-bottom.

DISTRIBUTION. From the Philippines to the Ryukyu Is and Papua New Guinea.

*Holotype.* In AIM No. TM-1363, length 26.7+ mm, width 7.1 mm, height of aperture 12.6 mm — holed on upper spire whorls (Fig. 20).



Figs. 20-22. *Mitra deynzeri* sp. n. 20, 21. Seragaki, Okinawa, Ryukyu Is.. 20. Holotype AIM No. TM-1363; 26.7 + mm. 21. Paratype, 24.8 mm. 22. Immature paratype from Panlao, Bohol, Philippines; 13.5 mm.

*Paratypes*. No. 1 from type locality in coll. A. Deynzer (24.8 x 5.5 x 11.6 mm) [Fig. 21]; No. 2 from Panlao, Bohol, Philippines in AIM (immature — 13.5 x 4.1 x 6.9 mm) [Fig. 22]; paratypes No's 3 and 4 from Panlao, Bohol, Philippines in coll. V. Dan (juvenile spec.); paratypes No. 5 from Laing I, Hansa Bay, Papua New Guinea in AIM.

*Mitra deynzeri* is closest to *M. ancillides* Broderip, 1836, a species which is endemic to the Tuamotu Archipelago, but the latter species has adpressed sutures and lacks the features of sutural girdle, the spiral sculpture is much finer and spiral striae number from 50-60 on the body whorl and the longitudinal sculpture of fine axial striae is also absent. *M. ancillides* is either uniformly fawn or has fawn axial zones and bands but lacks the wide-spaced dark brown lines.

The species is named for Major A. Deynzer, Sanibel I, Florida, who discovered the new species and who for many years has made molluscan material available for scientific research.

#### Genus *Ziba* H. & A. Adams, 1853

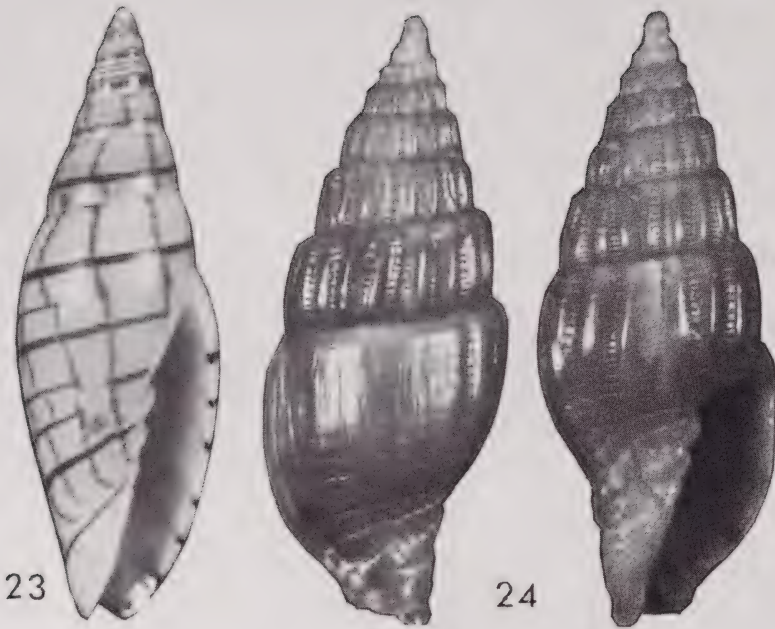
*Ziba* H. & A. Adams, 1853, Gen. Rec. Moll. 1: 179. Type species by SD (Wenz, 1943) *Mitra carinata* Swainson, 1824. Recent, West Africa.

#### *Ziba cloveri* (Cernohorsky, 1971)

(Fig. 23)

1971. *Cancilla (Ziba) cloveri* Cernohorsky, Rec. Auckland Inst. Mus. 8: 133, textfigs. 4-8; 1972 Okutani, Bull. Tokai Rg. Fish. Res. Lab. No. 72: 96, textfig. 41.





Figs. 23, 24. 23. *Ziba cloveri* (Cernohorsky). Russel I, Solomon Is, 24-31 m; 18.0 mm.  
 24. *Vexillum (Pusia) salisburyi* Cernohorsky. Panlao, Bohol, Philippines; 10.6 mm.

TYPE LOCALITY. c. 75 miles (121 km) S.W. of Kaushiung, Taiwan Strait, Taiwan, 70 fathoms (128 m).

DISTRIBUTION. From Japan to Taiwan and the Solomon Is, 24-180 m.

The species has been originally described from Taiwan and has later been reported from Takase, near Izu-Shichito Is, Japan, in 140-180 m by Okutani (1972). Recently several specimens have been collected from a fish-trap from the Russel Is, Solomon Is, at a depth of 24-31 m (*ex* — N. Potter) [Fig. 23], and off Tulagi I, Solomon Is (*ex*-B. Parkinson).

#### Family COSTELLARIIDAE

Genus **Vexillum** Roeding, 1798

Subgenus **Pusia** Swainson, 1840

*Pusia* Swainson, 1840, Treat. Malac. p. 320. Type species by *M.P. microzonis* (Lamarck) = *Mitra microzonias*, Lamarck, 1811. Recent, Indo-Pacific.

**Vexillum (Pusia) salisburyi** Cernohorsky, 1976 (Fig. 24)

1976. *Vexillum (Pusia) salisburyi* Cernohorsky, Rec. Auckland Inst. Mus. 13:114, figs. 6-11.

TYPE LOCALITY. Pupukea Beach, Oahu, Hawaiian Is.

At the time the description the species was known only from the Hawaiian Is and all specimens examined did not exceed 6.0 mm in length. A larger, 10.6 mm specimen has

been recently collected at Panlao, Bohol, Philippines (*ex* — A. Deynzer) [Fig. 24], extending the species' distribution considerably westward.

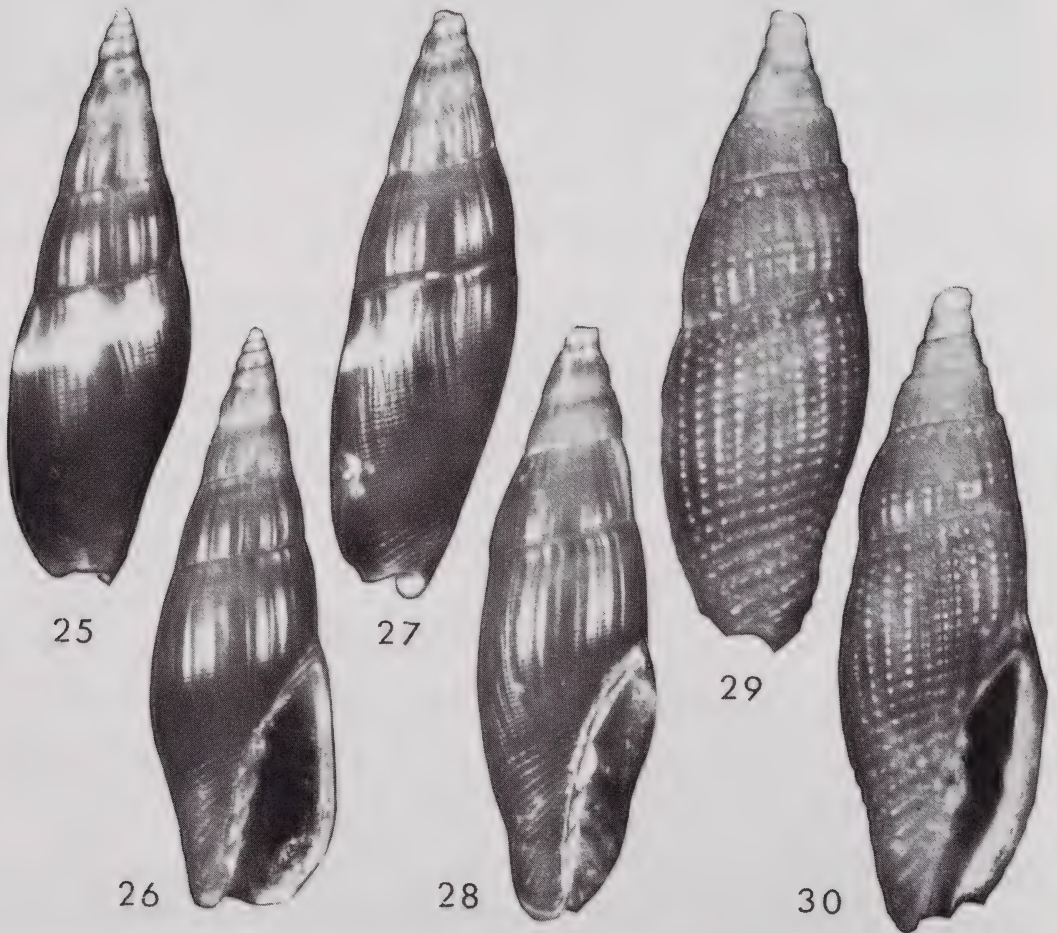
Genus **Thala** H. & A. Adams, 1853

*Thala* H. & A. Adams, 1853, Gen. Rec. Moll. 1: 178. Type species by SD (Cossmann, 1899) *Mitra mirifica* Reeve, 1845. Recent, Indo-Pacific.

**Thala maxmarrowi** sp. n.

(Figs. 25-28)

Shell very small, up to 10.0 mm in length, fusiformly-elongate, sutures impressed, width 29%-38% of length, solid, teleoconch of 4-4½ weakly to moderately convex whorls, protoconch of 3¼-4 conical, smooth embryonic whorls. Sculptured with numerous, low and slightly irregular thin axial riblets which number up to 40 on the body whorl, and almost equally as numerous, very fine macroscopic spiral striae and 12-14 close-set oblique cords on the siphonal fasciole. Aperture shorter than the spire, lirated within in



Figs. 25-30. 25-28. *Thala maxmarrowi* sp. n. Seragaki, Okinawa, Ryukyu Is. 25, 26. Holotype AIM No. TM-1364; 6.9 mm. 27, 28. Paratype with broken outer lip; 9.7 mm. 29, 30. *Thala illecebra* (Melville), Straits of Korea. Holotype NMWC; 6.2 mm.



mature specimens, outer lip tending to be patulous anteriorly, columella narrowly caloused and with 4 strong, oblique folds, siphonal canal straight. Shining brown in colour, sutures with a darker, nebulous greyish-brown band, dorsal side of body whorl anteriorly to the suture with a short, broad white band, band occasionally erupting into 2-3 blotches, aperture brown; an occasional white axial streak may also be present.

TYPE LOCALITY. Seragaki, Okinawa I, Ryukyu Is, Japan, 35 m, bottom of cliff-face (27-XII-1977).

DISTRIBUTION. From the Ryuku Is to off Lord Howe I, S.W. Pacific.

*Holotype*. In AIM No. TM-1364, length 6.9 mm, width 2.2 mm, height of aperture 3.0 mm (Figs. 25, 26).

*Paratypes*. No. 1 from the type locality in coll. M. Marrow (9.7 x 2.8 x 3.8 mm) [Figs. 27, 28]; paratype No. 2 from the type locality in AIM (7.7 x 2.8 x 3.5 mm); paratype No. 3 from off Lord Howe I, 31°38.2'S & 159°03.6'E, 44 m, in the Australian Museum, Sydney, No. C-114473 (4.8 x 1.8 x 2.1 mm).

This new species was at first compared with *Thala illecebra* (Melvill, 1927) from the Straits of Korea, holotype in National Museum of Wales, Cardiff, dimensions 6.2 x 1.9 x 2.5 mm (Figs. 29, 30). The latter species has a considerably stronger sculpture of axial riblets studded with granules and the protoconch has only 2 white, pusiine embryonic whorls. The white band on the dorsal side anteriorly to the suture is a distinctive feature and present in all specimens examined.

The species is named for Mr Max P. Marrow, Frankston, Victoria, Australia, a keen student of the Costellariidae, who also collected the specimens at Okinawa.

### Family TEREBRIDAE

#### Genus *Terebra* Bruguière, 1789

*Terebra* Bruguière, 1789, Encycl. Méth. Hist. Nat. Vers. 1: xv. Type species by SM (Lamarck, 1799) *Buccinum subulatum* Linnaeus, 1767. Recent, Indo-Pacific.

#### *Terebra eburnea* Hinds, 1844 (Figs. 31-33)

1844. *Terebra eburnea* Hinds, Proc. Zool. Soc. Lond. pt. 11: 153; 1845 Hinds in Sowerby, Thes. Conchyl. 1: 166, pl. 45, fig. 123; 1964 Cate & Burch, Veliger 6 (3): 146.

1885. *Terebra affinis* Gray (*pars*), Tryon, Man. Conch. 7: 14, pl. 2, fig. 18 only (non *T. affinis* Gray, 1834).

TYPE LOCALITY. Seychelles Is, Indian Ocean.

This little known species has been erroneously synonymized with *T. affinis* Gray, 1834 by Tryon (1885). The first modern record of *T. eburnea* is the one by Cate & Burch (1964) from Bileau I, Papua New Guinea, but the species has not been illustrated since its description.

The holotype of *T. eburnea* is no longer extant but the original description and illustration enable an easy recognition. I therefore designate figure 123 on plate 45 from Hinds in Sowerby (1845) as the illustrated lectotype of *T. eburnea* Hinds, 1844 (Fig. 31).

Recently 3 specimens of *T. eburnea* have been collected at Sogi, Apia, Western Samoa, 12 m (*leg.* I. Scott). Specimens have 14-15 whorls and a protoconch of 3½-4 smooth embryonic whorls, spire whorls have *c.* 30 axial ribs per whorl but the last 2-3 whorls are smooth apart from 2-8 fine spiral grooves and some axial growth-lines; early whorls show a sutural constriction through a punctate spiral groove between ribs. Shells are white and the protoconch and 4-5 post embryonic whorls are orange (Figs. 32, 33).

## Family TURRIDAE

### Genus *Turris* Roeding, 1798

*Turris* Roeding, 1798, Mus. Bolten. p. 123. Type species by SD (Dall, 1909) *Murex babylonius* Linnaeus, 1758. Recent, Indo-Pacific.

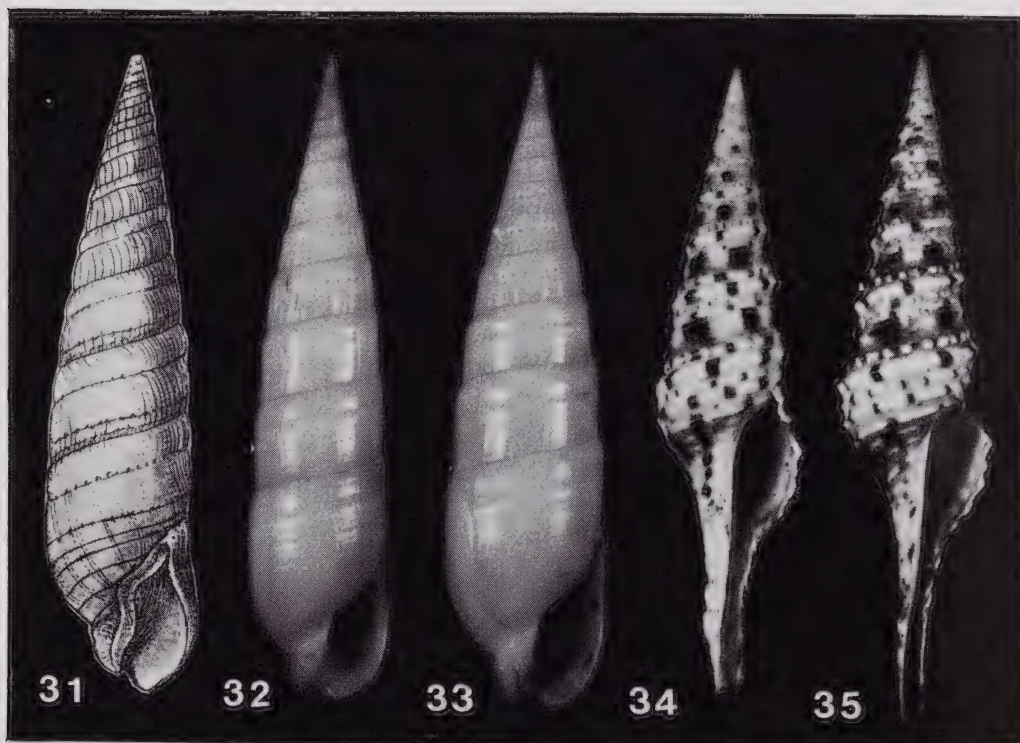
#### *Turris garnonsii* (Reeve, 1843)

(Figs. 34, 35)

1843. *Pleurotoma garnonsii* Reeve, Conch. Iconica 1: pl. 1, sp. 4.

1964. *Turris garnonsii* (Reeve), Powell, Indo-Pacific Moll. 1 (5): 329, pl. 18, figs. 7, 8, 18; pl. 254, fig. 1; pl. 256 (detailed synonymy).

TYPE LOCALITY. Cebu I, Philippines.



Figs. 31-35. 31-33. *Terebra eburnea* Hinds. 31. Illustrated lectotype (from Hinds in Sowerby, 1845, pl. 45, fig. 123). 32, 33. Specimen from Sogi, Apia, W. Samoa, 12 m; 37.7 mm and 33.5 mm respectively. 34, 35. *Turris garnonsii* (Reeve). 34. Nordup, Rabaul, New Britain, 24 m; 49.2 mm. 35. Solosolo, Upolu, W. Samoa, 11 m; 50.6 mm.



Powell (1964) monographed this species and according to available records at the time fixed the distributional range from East Africa to the Philippines. A specimen collected at Nordup, Rabaul, New Britain, 24 m, length 49.2 mm (*leg.* B. Parkinson) [Fig. 34], and another specimen from past Solosolo, Upolu, Western Samoa, 11 m, length 50.6 mm (*leg.* I. Scott) [Fig. 35], extend the species range into the central Pacific.

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